COGPEM71

Remove components from instrument and control systems

Overview

This standard is about your competence in removing components from instrument and control equipment using manufacturer's procedures. You will be required to ensure suitable precautions are taken to prevent the escape of liquids or gases. Following removal, the components should be labelled and stored according to organisational procedures. You will be following your organisation's safe working practices and working within the work permit procedures.

This standard deals with the following:
1. Remove components from instrument and control systems

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

Performance criteria

You must be able to:

P1 work safely at all times, complying with health and safety and other relevant regulations and guidelines
P2 establish, and where appropriate, mark component orientation for re-assembly
P3 ensure that any stored energy or substances are released safely and correctly
P4 remove the required components using approved tools and techniques
P5 take suitable precautions to prevent damage to components, tools and equipment during removal
P6 check the condition of the removed components and record those that will require replacing
P7 label and store the removed components in an appropriate location
P8 store or discard the removed components in accordance with approved procedures
P9 maintain documentation in accordance with organisational requirements

Knowledge and understanding

You need to know and understand:

K1 you must have a working knowledge and understanding of what your responsibilities are in respect of Health, Safety and Environment. This should include the limits of your personal responsibility, your legal responsibility for your own heath and safety and the health and safety of others
K2 you must have a working knowledge of the relevant regulations and the safe working practices and procedures required within your work area
K3 you must have a working knowledge and understanding of the engineering drawings and related specifications to which you will be expected to work, including technical drawings (component, assembly, general arrangements, isometrics, 1st and 3rd angle projections), method statements and product worksheets, tolerances
K4 you must have a working knowledge and understanding of component removal methods and techniques including what the types of isolations and connections are that have to be made, and which tools, equipment and methods can be used to remove specific components from specific systems
K5 you must have a working knowledge and understanding of the identification of component defects that have been removed
K6 you must have a working knowledge and understanding of the labelling and storage of components for re-use and what the available marking systems are for specific components and connections

K7 you must have a working knowledge and understanding of the disposal of unwanted components and substances, this should include what substances could be released during the removal of components, which risks are associated with the release of substances, and where to access information on the environmental standards, including an appreciation on COSHH, SEPA and company procedures
K8 you must have a working knowledge and understanding of the tool and equipment care and control procedures including what your responsibilities are for ensuring the security of tools and equipment that you use
K9 you must have a working knowledge and understanding of your responsibilities with regard to the reporting lines and procedures in your working environment

Scope/range related to performance criteria

1 The level and extent of responsibility will involve you being responsible for ensuring the equipment and work site is safe for others or yourself to work in by following defined procedures. You will be accountable for the integrity of the work site and ensuring the work is recorded in a formal manner. Authorisation for proceeding with the work will be given by authorised signatories within the PTW system

2 The equipment to be worked on includes:
2.1 Rotating equipment and tools
2.2 Protection methods
2.3 Electrical distribution systems

3 The type of components to be removed may be robust or fragile. Robust components are those that are resistant to most forms of damage or disruption during their working lives. Fragile components are those that are easily disrupted or damaged. Damage or disruption could be due to physical, chemical or other forces (e.g. Electro-magnetic).
Typical robust components could be:
3.1 Metering devices
3.2 Control panels
3.3 Mechanical linkages
3.4 Components of back-up systems
3.5 Motors
3.6 Control valves/governors
3.7 Components of process control systems
Typical fragile components could be:
3.8 Components of gauges
3.9 Components of metering devices
3.10 Components of motors
3.11 Components of analysing devices
3.12 Actuators
3.13 Seatings
3.14 Components of circuit/environmental protectors
3.15 Safety limit protection devices
3.16 Seals
3.17 Components of control panels
3.18 Springs
3.19 Diaphragms
3.20 Components of impulse systems
3.21 Electronic components

4 The removal techniques or procedures to be followed should involve components to be removed that may require a sequential series of steps to complete the removal. The component may be difficult to access and may be surrounded by other fragile/valued components and may need specialised tooling requirements. Removal may involve more than 1 differing technologies and/or involve a significant number of fragile components.

The specifications to which a candidate would be expected to work to could include:

4.1 Product worksheets
4.2 Technical drawings (components, assembly, general arrangement, isometrics).
4.3 Method statements
4.4 Maintenance schedules

5 The removal operations for the component may be may be difficult to access and may be surrounded by other fragile/valued components and may need specialised tooling requirements. Removal may involve more than one different technologies and/or involve a significant number of fragile components

Scope/range related to knowledge and understanding

The Knowledge and Understanding levels expressed indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression ”working knowledge and understanding” indicates you are able to:
1 Identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials
2 Describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote “Chapter and verse”. Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail
3 Interpret and apply the information obtained to your role, your working practice and in your expected working environment

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